

REMARKS:

Claims 1, 4, 5-7, 9, 12, 13, 15, 17, 20, 21, 23, 25, and 26 are currently pending in the application.

Claims 27-49 have been previously canceled without *prejudice*.

Claims 2, 3, 6, 8, 10, 11, 14, 16, 18, 19, 22, and 24 are hereby canceled herewith, without *prejudice*.

Claims 6 and 26 have been previously withdrawn from further consideration.

Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 stand rejected under 35 U.S.C. § 103(a) over *Anandalingam*, “Hierarchical Optimization: An Introduction” (hereinafter “*Anandalingam*”) in view of Official Notice.

Applicants respectfully submit that all of the Applicants arguments are without *prejudice* or *disclaimer*. In addition, Applicants have merely discussed example distinctions from the cited prior art. Other distinctions may exist, and as such, Applicants reserve the right to discuss these additional distinctions in a future Response or on Appeal, if appropriate. Applicants further respectfully submit that by not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicants are considered sufficient to overcome the Examiner's rejections. In addition, Applicants reserve the right to pursue broader claims in this Application or through a continuation patent application. No new matter has been added.

REJECTIONS UNDER 35 U.S.C. § 103(a):

A. Rejections Under 35 U.S.C. § 103(a) over *Anandalingam* in view of Official Notice

Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 stand rejected under 35 U.S.C. § 103(a) over *Anandalingam*.

Applicants respectfully submit that *Anandalingam* either individually or in combination with Official Notice, fails to disclose, teach, or suggest each and every element of Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25. Thus, Applicants respectfully traverse the Examiner's rejection of claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 as obvious under 35 U.S.C. § 103(a) over the proposed combination of *Anandalingam* and Official Notice.

For example, Applicants' independent Claim 1 recites the following:

A method for ***generating a price schedule*** for one or more products, the method comprising:

generating a transition graph comprising a plurality of stages, each stage representing a time interval and comprising one or more states and a plurality of paths, each path comprising a plurality of states, ***each state having a price value, an inventory value, and a state value***, the transition graph being generated by repeating the following for the plurality of stages until a final stage is reached:

- determining the price value of a successor state;
- calculating the inventory value of the successor state using the price value and the inventory value of a predecessor state; and
- calculating the state value of the successor state using the price value and the inventory value of the predecessor state;
- selecting a path of the plurality of paths according to the state values of the one or more states; and
- determining a price schedule from the selected path.

In rejecting Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 under 35 U.S.C. § 103(a) over *Anandalingam* in view of Official Notice, the Examiner states:

Anandalingam discloses a method for generating set of constraints, the method comprising generating a transition graph comprising a plurality of stages, each stage representing a time interval and comprising one or more states and a plurality of paths, each path comprising a plurality of states, each state having a value, an inventory value, and a state value, the transition graph being generated by repeating the following for a the plurality of stages until a final stage is reached: determining the value of a successor state; calculating the inventory value of the successor state using the value and the inventory value of a predecessor state; and calculating the state value of the successor state using the value of the predecessor state; selecting a path of the plurality of paths according to the state values of the one or more states; and determining a schedule from the selected path. (e.g. pg 1, pg 2, noting that a hierarchical optimization involves repeating for K levels an optimization of each level, the constraints of one level being the start of the next level).

(26 March 2008, Office Action, Page 4). However, Applicants respectfully submit that pages 1-2 of *Anandalingam* on which the Examiner relies to provide the limitation of “*generating a transition graph comprising a plurality of stages, each stage representing a time interval and comprising one or more states and a plurality of paths*, each path comprising a plurality of states, *each state having a price value, an inventory value, and a state value*, the transition graph being generated by repeating the following for the plurality of stages until a final stage is reached” do not disclose these elements. Rather, these pages merely describe, among other things, “find[ing] vectors x , u^i ($i = 1, \dots, m$) and v^i ($i = 1, \dots, m$)” in order to:

$$\text{minimize } f(x) \\ x \in X$$

$$\text{subject to } \bar{h}_i(x) = \max_{u^i \in U^i(x)} \min_{v^i \in V^i} g^i(x, u^i, v^i) \geq 0, \quad i = 1, \dots, m.$$

(*Anandalingam*, Page 2). Applicants respectfully submit that the portion of *Anandalingam* on which the Examiner relies does not teach, suggest, or even hint at “*generating a transition graph comprising a plurality of stages*” as recited in independent Claim 1 but merely discloses, among other things, *selecting vectors to minimize a function*. In addition, it does not appear that the formulas of *Anandalingam* shown above contain variables representing time, price, inventory, or state values. Thus, *Anandalingam* also does not disclose “*each stage representing a time interval and comprising one or more states and a plurality of paths*, each path comprising a plurality of states, *each state having a price value, an inventory value, and a state value*” as recited in independent Claim 1.

In addition, the Examiner further states:

Anandalingam fails to explicitly disclose:

That the optimization is for a pricing plan.

That the model represents a pricing plan problem for an item group comprising a plurality of items.

That the optimization is used to generate an optimized pricing plan, the optimized pricing plan associating a price with each item of the item group.

However, the Examiner took **Official Notice** in the previous Office Action that it is well known to use mathematical optimization models to determine the

pricing of items. Models are formulas that take input numbers and generate output numbers. The formulas themselves do not need to change based upon what the intended use of the formula is, only the input numbers. The use of a model yields predictable results no matter how the user characterizes the inputs. Therefore, it would have been obvious to a person having ordinary skill in the art to use the known method of hierarchical optimization, as disclosed in Anandalingam, for the purpose of optimizing prices of items because the known method of hierarchical optimization would improve the prices of the items in a predictable way. The optimized prices would help to increase profits.

Regarding claims 4, 5, and 7 - *Anadilangam fails to explicitly disclose* wherein selecting the path according to the state values comprises: determining a state at the final stage having a state value; and determining a path comprising a state of an initial stage and the state having the optimal state value and further comprising eliminating a successor state in response to a constraint; and determining a state at the final stage having a certainty value of a predetermined value.

However, the Examiner takes *Official Notice* that it is old and well known in the art to factor in variations over time while modeling data. Therefore, it would have been obvious to a person having ordinary skill in the art to add in time constraints as one of the constraints in Anandalingam, for the purpose of making the model a more accurate depiction of reality.

(26 March 2008, Office Action, Pages 4-5). (Emphasis added). *Applicants thank the Examiner for acknowledging that Anandalingam does not disclose the above referenced claim limitations* but respectfully disagree with the Examiner's assertion of Official Notice to fill these gaps.

Applicants respectfully submit that *Anandalingam* and the Examiner's Official Notice either individually or in combination, fail to disclose, teach, or suggest each and every element of Applicants' Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25. Thus, Applicants respectfully traverse the Examiner's rejection of 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 as obvious under 35 U.S.C. § 103(a) over *Anandalingam* and the Examiner's Official Notice, either individually or in combination.

Further, Applicants respectfully traverse the Official Notice because the asserted facts, as best understood by the Applicants, *are not supported by substantial documentary evidence or any type of documentary evidence* and appear to be the Examiner's opinions formulated using the

subject Application as a template, which constitutes impermissible use of hindsight. Furthermore, under these circumstances, it is inappropriate for the Examiner to take Official Notice without documentary evidence to support the Examiner's conclusion. (See MPEP § 2144.03). Applicants respectfully request the Examiner to produce authority for the Examiners Official Notice.

Applicants respectfully direct the Examiner's attention to MPEP § 2144.03 which states that only "in limited circumstances," is it "appropriate for an examiner to take official notice of facts not in the record or to rely on common knowledge in making a rejection". (MPEP § 2144.03). Furthermore, "Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are *capable of instant and unquestionable demonstration as being well-known*." (MPEP § 2144.03).

With respect to the subject Application, the Examiner's statement that the "Examiner takes Official Notice that it is old and well known in the art to factor in variations over time while modeling data," is not capable of instant and unquestionable demonstration as being well-known. (26 March 2008, Office Action, Page 5). As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), "the notice of facts beyond the record which may be taken by the examiner must be '*capable of such instant and unquestionable demonstration as to defy the dispute*'" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 U.S.P.Q. 6 (C.C.P.A. 1961))." (MPEP § 2144.03(A)). (Emphasis Added).

Applicants respectfully remind the Examiner that "it is *never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record*, as the principal evidence upon which a rejection was based". *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697. As the court held in *Zurko*, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidentiary support. *Id.* at 1385, 59 USPQ2d at 1697. See also *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002)." (MPEP § 2144.03(A)).

"Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge." See *Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 (holding that general conclusions concerning what is

“basic knowledge” or “common sense” to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection). “The examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge.” See *Soli*, 317 F.2d at 946, 37 USPQ at 801; *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. “The applicant should be presented with the explicit basis on which the examiner regards the matter as subject to official notice and be allowed to challenge the assertion in the next reply after the Office action in which the common knowledge statement was made.” (MPEP § 2144.03(B)).

With respect to the subject Application, *the Examiner has not properly Officially Noticed or not properly based the Official Notice on common knowledge*. For example, the Examiner states:

[T]he Examiner takes *Official Notice* that it is old and well known in the art to factor in variations over time while modeling data. Therefore, it would have been obvious to a person having ordinary skill in the art to add in time constraints as one of the constraints in Anandalingam, for the purpose of making the model a more accurate depiction of reality.

(26 March 2008, Office Action, Pages 5-6). (Emphasis Added). The above noticed Examiner’s conclusory statement *does not adequately address the issue that this statement is considered to be common knowledge or well-known in the art*. Applicants respectfully submit the following statement, to further explain why the Examiner’s above noticed statement is not considered to be common knowledge or well-known in the art.

Further, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. In order to do so, three basic criteria must be met. First, *there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings*. Second, *there must be a reasonable expectation of success*. Finally, *the prior art reference* (or references when combined) *must teach or suggest all the claim limitations*. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, *and not based on applicant’s*

disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, ***there must be something in the prior art as a whole to suggest the desirability***, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

A recent Federal Circuit case makes it clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

Thus, Applicants respectfully submit that independent claims 1, 9, 17, and 25 are in condition for allowance and further submit that dependent claims 4, 5, 7, 12, 13, 15, 20, 21, and 23 are allowable as depending from an allowable independent claim as well as further limitations. Applicants respectfully request that the Examiner's rejections under 35 U.S.C. § 103(a) be withdrawn.

B. Applicants Claims are Patentable over *Anandalingam* in view of Official Notice

Applicants respectfully submit that independent Claim 1 is considered patentably distinguishable over the proposed combination of *Anandalingam* and Official Notice. This being the case, independent Claims 9, 17, and 25 are also considered patentably distinguishable over the proposed combination of *Anandalingam* and Official Notice, for at least the reasons discussed above in connection with independent Claim 1.

Furthermore, with respect to dependent Claims 4, 5, 7, 12, 13, 15, 20, 21, and 23: Claims 4, 5, and 7 depend from independent Claim 1; Claims 12, 13, and 15 depend from independent Claim 9; and Claims 20, 21, and 23 depend from independent Claim 17. As mentioned above, each of independent Claims 1, 9, 17, and 25 are considered patentably distinguishable over *Anandalingam* and Official Notice. Thus, dependent Claims 4, 5, 7, 12, 13, 15, 20, 21, and 23 are considered to be in condition for allowance for at least the reason of depending from an allowable claim.

For at least the reasons set forth herein, the Applicants respectfully submit that Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 are not rendered obvious by the proposed combination of *Anandalingam* and Official Notice. The Applicants further respectfully submit that Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 are in condition for allowance. Thus, the Applicants respectfully request that the rejection of Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 under 35 U.S.C. § 103(a) be reconsidered and that Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, 23, and 25 be allowed.

CONCLUSION:

In view of the foregoing remarks, this application is considered to be in condition for allowance, and early reconsideration and a Notice of Allowance are earnestly solicited.

Although the Applicants believe no additional fees are deemed to be necessary; the undersigned hereby authorizes the Director to charge any additional fees which may be required, or credit any overpayments, to **Deposit Account No. 500777**. If an extension of time is necessary for allowing this Response to be timely filed, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) to the extent necessary. Any fee required for such Petition for Extension of Time should be charged to **Deposit Account No. 500777**.

Please link this application to Customer No. 53184 so that its status may be checked via the PAIR System.

Respectfully submitted,

24 June 2008
Date

/Steven J. Laureanti/signed
Steven J. Laureanti, Registration No. 50,274

BOOTH UDALL, PLC
1155 W. Rio Salado Parkway, Ste. 101
Tempe AZ, 85281
214.636.0799 (mobile)
480.830.2700 (office)
480.830.2717 (fax)
steven@boothudall.com

CUSTOMER NO. 53184